

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP2005/005613

A. CLASSIFICATION OF SUBJECT MATTER

C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12N C12Q A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBASE, BIOSIS, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	HAMADA KENJI ET AL: "Increased expression of the genes for mitotic spindle assembly and chromosome segregation in both lung and pancreatic carcinomas" CANCER GENOMICS & PROTEOMICS, vol. 1, no. 3, May 2004 (2004-05), pages 231-240, XP009053132 ISSN: 1109-6535 the whole document ----- -/--	1-7,9, 10,66,67

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

2 September 2005

Date of mailing of the international search report

20. 12. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5618 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Guarinos Viñals, E

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/94629 A (AVALON PHARMACEUTICALS) 13 December 2001 (2001-12-13) sequence 3760 -----	1-7, 9-18, 35, 36, 39, 40, 44-47, 54, 55, 57, 59-62, 66-68
X	US 6 544 766 B1 (BERAUD CHRISTOPHE ET AL) 8 April 2003 (2003-04-08) sequences 28, 29 -----	9, 10, 13, 14, 16, 18, 44-47, 54, 55, 57, 59-62, 68
X	WO 01/31335 A (CYTOKINETICS, INC; WOOD, KENNETH, W; FINER, JEFFREY, T; BERAUD, CHRIST) 3 May 2001 (2001-05-03) figures 1, 2 -----	11, 13-16, 18, 44-47, 54, 55, 57, 59, 62, 68
X	US 6 331 396 B1 (SILVERMAN ROBERT H ET AL) 18 December 2001 (2001-12-18) column 55 - column 56, line U37426; table 4 -----	9, 10, 68
X	US 6 706 867 B1 (LORENZ MATTHIAS) 16 March 2004 (2004-03-16) column 95 - column 96, line IC01259; table 1 -----	9, 10, 68
X	YARROW J C ET AL: "Phenotypic screening of small molecule libraries by high throughput cell imaging." COMBINATORIAL CHEMISTRY AND HIGH THROUGHPUT SCREENING, vol. 6, no. 4, June 2003 (2003-06), pages 279-286, XP009053202 ISSN: 1386-2073 the whole document -----	11, 13-16
X	US 6 472 521 B1 (UHLMANN EUGEN ET AL) 29 October 2002 (2002-10-29) sequences 1-9 -----	59
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/030832 A (CHIRON CORPORATION; REINHARD, CHRISTOPH; WALTER, ANNETTE) 17 April 2003 (2003-04-17) sequences 1-18 -----	59
X	WO 03/099224 A (ISIS PHARMACEUTICALS, INC; DOBIE, KENNETH, W; KOLLER, ERICH) 4 December 2003 (2003-12-04) sequences 5-72 -----	59
X	KAISER ASTRID ET AL: "All-trans-retinoic acid-mediated growth inhibition involves inhibition of human kinesin-related protein HsEg5" JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, BALTIMORE, MD, US, vol. 274, no. 27, 2 July 1999 (1999-07-02), pages 18925-18931, XP002162883 ISSN: 0021-9258 page 18926, left-hand column, paragraph 3 -----	59
X	WEIL D ET AL: "Targeting the kinesin Eg5 to monitor siRNA transfection in mammalian cells." BIOTECHNIQUES, vol. 33, no. 6, December 2002 (2002-12), pages 1244-1248, XP001207431 ISSN: 0736-6205 the whole document -----	60
X	SHARP DAVID J ET AL: "The bipolar kinesin, KLP61F, cross-links microtubules within interpolar microtubule bundles of Drosophila embryonic mitotic spindles" JOURNAL OF CELL BIOLOGY, vol. 144, no. 1, 11 January 1999 (1999-01-11), pages 125-138, XP002343098 ISSN: 0021-9525 page 126, right-hand column, last paragraph -----	62,68
X	BLANGY A ET AL: "Phosphorylation by p34-cdc2 regulates spindle association of human Eg5, a kinesin-related motor essential for bipolar spindle formation in vivo" CELL, CELL PRESS, CAMBRIDGE, MA, US, vol. 83, 29 December 1995 (1995-12-29), pages 1159-1169, XP002978961 ISSN: 0092-8674 page 1166, right-hand column, paragraph 2 -----	62,68
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HOULISTON EVELYN ET AL: "The kinesin-related protein Eg5 associates with both interphase and spindle microtubules during Xenopus early development" DEVELOPMENTAL BIOLOGY, vol. 164, no. 1, 1994, pages 147-159, XP002343099 ISSN: 0012-1606 page 148, left-hand column, paragraph 3 -----	62,68
A	SUZUKI C ET AL: "Identification of COX17 as a therapeutic target for non-small cell lung cancer" CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 63, 1 November 2003 (2003-11-01), pages 7038-7041, XP002304991 ISSN: 0008-5472 -----	
A	WO 03/015613 A (THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF HEALTH) 27 February 2003 (2003-02-27) -----	

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national application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 8, 41, 63
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 11-25, as far as an "in vivo" method is concerned, and claims 35-40 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
19-25, 31 completely; 1-7, 9-18, 35-40, 44-62, 66-68 partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claims 11-25, as far as an "in vivo" method is concerned, and claims 35-40 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.1

Claims Nos.: 8, 41, 63

Claim 8 relates to a non-small cell lung cancer (NSCLC) reference expression profile that comprises the expression pattern of two or more genes selected from the group consisting of KIF11, GHSR1b, NTSR1 and FOXM1. An expression profile is defined in page 23, lines 28-33 of the present application as the level of expression of these genes. The subject-matter of claim 8 is a mere presentation of information for which no search is required as specified in Rule 39.1(v) PCT. No search was therefore carried out by the International Searching Authority on the subject-matter of claim 8.

Present claims 41 and 63 relate to a product defined by reference to a desirable characteristic or property, namely its capacity of being identified by a screening method. The claims cover all products having this characteristic or property, whereas the application provides no support within the meaning of Article 6 PCT and no disclosure within the meaning of Article 5 PCT for any of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, no search has been carried out for the subject-matter of claims 41 and 63.

Continuation of Box II.2

Present claims 9 and 68 relate to a reagent defined by reference to a desirable characteristic or property, namely its capacity to detect the expression of the KIF11 gene. The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the reagent as being a nucleic acid or an antibody (as defined in page 24, line 9 of the present application).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 19-25, 31 completely and 1-7, 9-18, 35-40, 44-62, 66-68 partially

a method of diagnosing non-small cell lung cancer (NSCLC) comprising determining the expression level of the KIF11 gene, a kit comprising two or more reagents which detect the expression of the KIF11 gene, an array comprising two or more polynucleotides which bind to the KIF11 gene, a method of identifying a compound that inhibits the expression level of the KIF11 gene, a method of screening for a compound for treating or preventing NSCLC comprising contacting a compound with the KIF11 polypeptide or with the KIF11 polynucleotide, a method for measuring RNA transporting activity of the KIF11 polypeptide comprising contacting the KIF11 polypeptide with a RNA to be transported, a method of identifying an agent that modulate RNA transporting activity comprising contacting the KIF11 polypeptide with a RNA to be transported in the presence of an agent, a kit comprising the KIF11 polypeptide and the KOC1 polypeptide, a method of treating or preventing NSCLC by administering an antisense complementary to the coding sequence of the KIF11 gene, a method of treating or preventing NSCLC by administering a siRNA that reduces the expression of the KIF11 gene, a method for treating or preventing NSCLC by administering an antibody that binds to the KIF11 gene, a method of treating or preventing NSCLC by administering a polypeptide encoded by the KIF11 gene, a double-stranded molecule comprising the KIF11 gene, a vector comprising the KIF11 gene, a composition comprising an antisense against the KIF11 gene, a composition comprising a siRNA against the KIF11 gene, a composition comprising an antibody that binds to the KIF11 polypeptide, a method of predicting NSCLC prognosis by detecting the expression level of the KIF11 gene and a kit comprising a reagent for detecting the KIF11 polypeptide.

2. claims: 1-7, 9-18, 28-30, 34-40, 44-62 partially
methods and products relating to the GHSR1b gene.

3. claims: 1-7, 9-18, 28-30, 34-40, 44-62 partially
methods and products relating to the NTSR1 gene.

4. claims: 1-7, 9-18, 35-40, 44 partially
methods and products relating to the FOXM1 gene.

5. claims: 26,27, 32, 33, 42, 43, 64, 65 completely and 66-68

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

partially

methods and products relating to the KOC1 gene.

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International Application No
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0194629	A	13-12-2001	AU 6455901 A CA 2411601 A1 EP 1358349 A2 JP 2004509612 T	17-12-2001 13-12-2001 05-11-2003 02-04-2004
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